

I must comment on RM's 11305 and 11306.

The bandwidth table summary on page 15 adopted by the ARRL is defective. That is, the ARRL states its shortcomings and longcomings quite accurately, then follows it too closely. Although the equivalent necessary bandwidth column is correct, the input column to the left of it is dependent on the right. The list on the left, an even going tumble of miscellaneous FM through phase shift methods, ends with an especially raspy digital modulator. The right column, therefore, should test or design with filters of at least Chebyshev quality everywhere. Only two types a phase keyer and the heavy rasper were tested with better filters. Most were tested with Butterworths. Whether the filters are used before or after the modulators is sometimes a matter of synthesis. From High School I recalled that my book says, Chebyshev filters can increase in all qualities except time delay, a parameter useless, here. An inquiry to the publishings of Paul Malvino (the original author?) and a check with York University in England, both confirmed this. Also remembered and confirmed at the same time, was that Butterworth filters always have 3 dB fluctuations (dips). Cascadeing the poles simply enumerates the 3 dB dips. Usually, manufacturers, and even, better home builders usually follow the "Have green apples, will make Pie", principle. Mixed conditions can yield mixed results. An example, is a new transmitter turned old on the windowsill. Another example, is a handheld dropper, or being chronically used with a weak battery. RM- 11306 and RM- 11305 both agree that 60 metres should "Grandfather the new" (2.8 kHz bandwidth SSB etc). I agree too, I see no reason not to. Amateur Radio is a form of communication. Much more importantly, it is a form of artificial communication. Some modes of operation, such as SSB (and Ham TV, a bit), separate portions of the ranges of what we hear or see into pass, discard, (or mix distort) alleys. This is important to what we, 1. Take power, 2. Transmit, 3. Receive, and 4. What others receive or perceive. 1. Man, the species not sex, has gone from chewing skin for shoes, and dragging his belongings behind him safely tied to branches, to pulling, say, 500 watts from the wall, 5 from a battery, or 20 from a satellite battery system, to communicate by wireless, above static or quiet. Usually from Nature's stores, not sun or sweat. The future does not guarantee the same. 2. The Human ear hears exactly  $10\frac{1}{3}$  octaves, 17 Hz to 22 kHz, regardless of sex or age. (Your auditory harp might have notches). The ARRL argues in RM- 11306, that the bandwidth of Bell Telephone / George Apfel / SSB should be widened from a spread of  $2\frac{11}{12}$  octaves to a horizon of a whopping  $3\frac{1}{12}$  octaves, except for the specifics of 60 metres, and I agree, so let's keep talking. Many people, and especially, many men, mutter, mirk, and moan that Shingle Shideband loses such sounds, as the letter, M, etc. Arguments these days, that the extra exactly 4 low-frequency octaves of AM take up too much double bandwidth (and power), are dimming. The upper limit sounds approved for Single Sideband are then, and now coming?, both fall on the middle and upper

range of the whistle- like sound, “sh”. AM at 4.5 kHz falls on about the bottom of the sound, “s”. 4. But wait, it’s still worse. The limited sounds emitted by SSB and limited AM are un- inimical to the needs and curiosity of women and children. They’re not going to be interested if their voices, and children’s clapping, and our voices too, are distorted. Women and children shouldn’t be handicapped first. That’s a prejudice and a shame. Prejudice, by the way, is a two- way street. Morse code, is the first, one, and only Human learnable (“linear” or “non multiplexed”) digital mode. It should stay, the one, only, and first mode, forever. One mentions that it’s a language, in a language. Morse code is like Music. The brain learns it a “thousand” ways at once. Simplifying it doesn’t help. (I was learning Morse code in the late 60’s and the first half of the 70’s, when, advice like, “Morse code is easy, learn it in your sleep. CQ DX! Send it faster than you can receive it, after all, why waste the other operator’s time”, Abounded. Ouch! Also the pig champion: “The faster you send and receive it, the better and faster you’ll learn (and teach) it”). No, not necessarily. Neatness and tidiness, always having open expectation, like writing down the dots and dashes of an unrecalled symbol as you receive it, then looking it up later, proveing to yourself that you need to know it (just mentioned), and sober- minded, untired not tired repetition, is the way to go. Very importantly, teaching it helps you learn it, too, just like a language. Youngest minds usually sop up languages like bread sops up gravy. Oddly enough, teaching the Morse code at the same time as the Alphabet, normally makes it learned twice as fast. Like ohm’s law, that’s almost 4 times the power. Needless to say, I’m about to bash the ARRL’s condemnation of auto semi auto Morse repeaters, and bash their thrust of auto semi auto repeaters on, any band with ionospheric, or even, tropospheric characteristics at all.

RM- 11305’s analysis of spectrum occupancy by mode, is flawless, however, the conclusion before it, that there’s no sqatter’s rights, seems about as silly as the idea that the pioneers should pack up their settlements and farms and move everyday, until I realize that RM- 11305 really means moving the burden of planning from the FCC rules to the Amateur groups. That makes sense. Personally, though, I feel like I’m the GrandFather of GrandFather clauses. I like to make as few changes to my stations as possible. I want to find the Roosters’ Net on 160, the Railroad coders sending neat code on the bottom of 20, the Liberty Net on 3951.5, the Wax Paper Net on 431 LSB, the ARRL Net and the Owls wherever they are that season, Matt Harris’ Educational TV group on 426 and 5.8 GHz, then cooling off on 147.9, and so on. Most people don’t realize how digital audio compression works. It interval samples sounds like booms, m’s, r’s, I’s, e’s, sh’s, and s’s, and their volumes, and makes a note, a “bit”, and stops and starts. Forget t’s and k’s, they’re a bit short, to pun. Then it series- parallels the time- arranged bits back into ribbons of the approximate original frequencies and volumes, and real time. This doesn’t really cut off the lows or highs, but it assumes that if you’re making an m, an r, an s, etc, you’ll still

be making the same sound again, next moment. That's why some cell phones warble all the time. Pretty terrible. There's a general tendency to use narrow band emissions CW, SSB, AM, Kahn AM, Cquam AM, etc on the low frequencies and the thin bands. Fine, and usually worth GrandFathering. There's also a tendency to use medium bandwidth on medium bands like NBFM and FM on 2 metres, etc. (Remember, the bandwidth of an FM signal is equal to the 2 sidebands plus the frequency deviation. NBFM is a bit wider than AM, etc). Let's GrandFather some obvious things, the '305 method, not the '306 method, like CW, SSB, and AM, two of them, "armchair" modes, on 160, a band broadcast listeners regularly hear by accident, then reach, by pruning the coils on their AM receivers. Two receivers back to back, with a wire coupling from the oscillator under the superhet to the antenna of the other, are a quickie for CW and SSB. How about tone- CW A2 on 10 metres, etc? Digital not FM, TV on narrow 5.8 GHz, is an example of pushing it a bit much. I feel we should only have CW, AM, SSB, FM, and non- digital TV on any band with any ionospheric or tropospheric conditions. That's 5.925 GHz and down in frequency. Of course the 300/ 1200 Baud bandwidth listed on RM- 11306 page 8 is thin, and can be widened, but on which bands? Giving all the bands above 5.925 GHz to digital would be fine, after all. When you talk about a 1/4 GHz here, and 7 bands there, you're starting to talk about some real bandwidth. (A poor but workable compromise, would be to have WHOLE BAND interleaving of analog and digital as follows, (It would GrandFather things pretty nicely, except on 6 metres and 1- 1/4 ):

1, 2, 2.5, 4, 6, 1.2, 3 cm, all digital. 5- a., 9- d., 13- a., 23,33- d., 70- a. 1.25m-

d., 2m- a., 6m- d., 10m-a., 12m- d., the rest, analog).

You're talking about bands that need a decent turnstyle or beam to transmit, and a decent beam or dish to receive. A sheet of wax paper will stop these frequencies, a sheet of glass will stifle them, and a sheet of paper or clear plastic will let them through, but why complain? Put up a decent high antenna, not a bump on the side of a notebook computer, after all, We're Hams!

Otherwise, the digital crowd will do the opposite. The ARRL RM- 11306 suggestions on the last two pages are, 47C.F.R.\_S 97.309(a) and (b) : Using published digital codes to facilitate communications, then log and measure them. It looks pretty good. The novices should not be ghettoed. They should be amongst the veterans. Bandwidth limitations especially on phone are pretty ludicrous. If you're just bragging in the jam, it's all right to put a sock over the microphone, add mic cable, turn the Chebyshev turret switch clockwise, dig into a roundtable/ ragchew, switch to sideband or another band, or just get off! (listening or not) It's not your turn. That's the American way . If it's grass on the panadapter and you're feeling selfless, do the opposite. Take off the sock, turn the Chebyshev counterclockwise, raise the antenna a branch, get more than two of the other

operators rolling, showing off their families and birds, (or tone CW on 10 metres, a hint), put the Ham TV on a Shadbolt pattern and tones, then work pictures, and finally, put the Cathedral Radio in the back of the car, play said same, go to the store for shoes, and see who gets curious, and, Oh by the way, someday you'll be chewing skin for shoes, so enjoy life whilst you can. Fred Jodry, KA2PYQ ...\_.\_